

From the Army Acquisition Executive

Lessons Learned in Iraq and S&T Innovations

Our warfighters rely on and deserve the very best protection, equipment and weapon systems that America can provide. With Congress's support, the Army continues to work in partnership with its sister services and industry to ensure that all in harm's way have life-saving body armor and that their combat platforms have the ballistic protection required to safeguard them from improvised explosive devices (IEDs), rocket-propelled grenades (RPGs) and other life-threatening devices.



We are saving lives through a holistic approach to force protection: personal body armor, vehicle armor, electronic countermeasures, greater situational awareness (SA), improved weapon system capabilities and better training and operational focus. Operations in Iraq and Afghanistan highlight the power of highly mobile communications networks and network-centric operations. The network-centric force has dramatically improved SA and the quality of information that, in turn, leads to dramatic improvements in military effectiveness across the range of vital functions, including operational cycle times, battle command, force application, force protection and logistics. These improvements combine to create unprecedented flexibility and agility levels.

The 1st Cavalry Division and the 1st Armored Division have demonstrated this agility in their operations. Using the power of networked communications, they have been able to move information at unprecedented rates, which has shortened the time required to conduct tactical and operational updates. This has accelerated the speed of command by enabling faster planning and operations execution. Using this technology, Stryker units were able to move from northern locations to the south and fight two battles within 48 hours, demonstrating a significant improvement in both flexibility and agility.

The Stryker fleet has logged nearly 5 million miles, more than five times the projected annual usage. The vehicle has superior SA and focuses fires on both conventional and asymmetric threats. The addition of slat armor has greatly increased both Soldier and vehicle survivability. Stryker is a great success story!

Significantly increased SA, digital command and control and enhanced lethality and survivability helped make the Bradley Fighting Vehicle M2/M3 A3 into a highly praised urban assault vehicle. Its success with Soldiers stems from the combination of an Improved Bradley Acquisition Subsystem and the Commander's Independent Viewer, both incorporating 2nd Generation Forward Looking Infrared technology. Designed as a hunter/killer system to defeat multiple enemy vehicles at maximum ranges, it allows an A3 crew to maneuver "buttoned up" in an urban environment — superb SA and protection for both crew and infantry squads. This, in combination with the Bradley Reactive Armor Tiles, is saving lives every day and increasing infantry and cavalry squad lethality and battlefield sustainability.

Likewise, the M1114 up-armored Humvee is receiving praise for its integrated armor protection against bullet threats, IED fragments and antitank/antipersonnel mines. I heard from a father whose son was

driving the lead Humvee in mountainous terrain near the Afghanistan-Pakistan border when he drove over an IED. While the Humvee took a hard hit, the crew compartment's integrity protected both his son and his passenger. They sustained minor sprains and bruises and were back on duty within a few days.

Interceptor Body Armor (IBA) continues to save lives, and we are reducing its weight and improving it to offer even greater protection. IBA consists of an Outer Tactical

Vest (OTV) and a set of ballistic inserts, often referred to as Small Arms Protective Insert (SAPI) plates. Originally providing protection against fragmentation and small arms ammunition, the total IBA weight is now 16 pounds for size medium — a reduction in weight of 9 pounds from the previous version. The latest improvements were developed by our Soldiers in Iraq and include the Deltoid Auxiliary Protector (DAP) and the Enhanced SAPI (ESAPI). The DAP protects Soldiers' shoulder and armpit regions with the same ballistic protection level as OTVs. ESAPI is an improvement that provides protection against armor-piercing ammunition. In addition, the Cupola Protective Ensemble (CPE), originally designed for mine clearing as the Advanced Clearance Ensemble, has been redesigned to offer protection against blast and fragmentation effects of RPGs and IEDs. CPEs can be worn over standard IBAs to provide protection to the head, neck, face and extremities. The system also provides an integrated cooling system to combat heat effects.

The M4 is the preferred, individual weapon for Soldiers, who like its lightweight, compact design because it makes maneuvering within small confines much easier — both in vehicles and buildings. Our Soldiers also praise its accuracy. In addition, M240 family variants, including the M240B machine gun, are praised for both increased accuracy and reliability.

Army leaders have long recognized the fundamental importance of science, mathematics and technology to our global competitiveness and, especially, national security. That is why the Army sponsors the eCYBERMISSION program — to inspire and encourage America's youth to pursue careers in science, mathematics and engineering.

The application of technology in today's world is extremely important. It is the economic engine of nations worldwide and, as we see in this issue, it saves lives every day. eCYBERMISSION invites 6th-through 9th-grade students of all backgrounds, interests and proficiency levels to identify a problem in their community. Through eCYBERMISSION, these students are challenged as a team to develop a solution to an important community problem by applying the science and mathematics learned in the classroom. I have found that their innovative solutions speak volumes about the inventiveness of our Nation's youth, to their future and to the future of our great country.

If you are interested in volunteering or if someone you know would be interested in participating, go to <http://www.ecybermission.com> and accept the challenge! Also see the related article on Page 108 of this issue.

Claude M. Bolton Jr.
Army Acquisition Executive